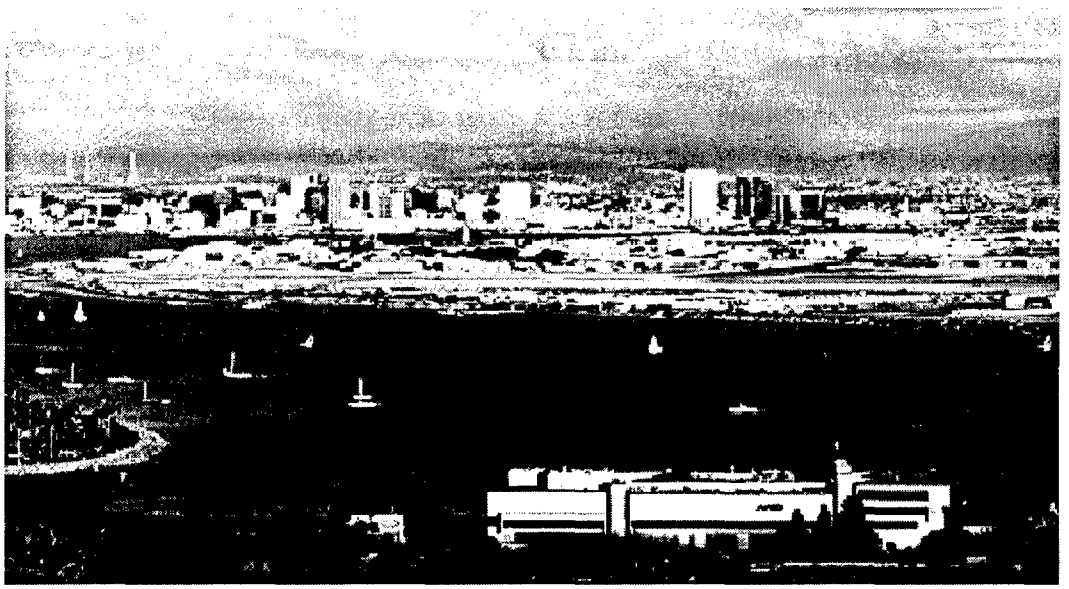
Naval Command, Control and Ocean Surveillance Center
RDT&E Division,
San Diego, CA 92152-5001



NRaD Technical Document 1064

Revision 1

Revision 1 is available only in this on-line version.

July 1994

NRaD Writing and Editorial Guidelines

Foreword

This document contains general and detailed writing guidelines. The general guidelines are included for engineers, scientists, technicians, and administrators who must write as an adjunct to their main tasks. The detailed guidelines are intended to help writers and editors consistently use good writing practices; however, everyone is encouraged to use these detailed guidelines to help prepare their project reports and associated documentation.

Please keep in mind that these writing guidelines must be applied with a certain degree of flexibility. Exceptions will often occur, and ample room is left for individual initiative and discretion.

If you have questions or suggestions about this document, please contact the Publications Branch of the

Technical Information Division. For questions about scientific and technical information (STI) processing at the Naval Command, Control and Ocean Surveillance Center RDT&E Division (NRaD), refer to the "STI Handbook," NOSC Technical Document 1545.

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General Writing Guidelines

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Before you begin writing a rough draft, take time to analyze the proposed document. Identify the intended audience, clarify your purpose, and determine the security classification of the material. Next, outline the information. Determine where and what figures and tables are required. Remember that technical publications should be clear, concise, coherent, accurate, and interesting. To make them so, observe the following principles:

1. Use sentences that are short and straightforward, but do not sacrifice clarity for brevity.

2. Talk directly to the reader. Use active verbs of motion and concrete words to explain facts and procedures in terms the reader will understand. Avoid the passive voice.

3. Do not stack modifiers. Normal word order is conversational word order. For example, nobody would use an expression such as convergence-zone-propagation-measurement results in speech.

4. Use hyphens as an aid to clarity, but avoid excessive hyphenation. If necessary, reword to avoid the need for hyphens. Do not use hyphens after prefixes such as non, sub, multi, micro, semi, and most other Latin prefixes, unless it is needed to avoid doubling a vowel or tripling a consonant, such as semi-independent and shell-like.

5. Avoid excessive capitalization. Avoid capitalizing the name of every project, program, system, module, component, or part.

6. Avoid redundancy unless you have a compelling need for emphasis.

7. Use the technical words of your discipline but not the jargon of your laboratory.

8. Make the purpose of every sentence in your report clear and relevant.

9. Be clear, be brief, and be honest. Be forthright about omissions, inaccuracies, and errors.

10. Consider the needs of a diverse audience. Tailor abstracts, introductions, conclusions, and

recommendations to the less technically oriented.

11. Do not use unnecessary adjectives or adverbs. Write with direct nouns and verbs to strengthen meaning.

12. Do not convert nouns or adjectives to verbs such as optimize and finalize.

13. Choose the precise word or phrase when using words such as datum (singular), data (plural),criterion (singular), criteria (plural).

14. Do not use affected or imprecise words such as of course and very large.

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Writing Practices

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This section is excerpted from Just Plain English, September 1981, Office of the Chief of Naval Operations (OP-09BR), Washington, D.C.

Compact writing

Suspect wordiness in everything you write. Quarrel with the need for every paragraph, every sentence, every word. The longer you take to say things, the more you blur your ideas. When deadlines permit, let your writing rest for a day and then rewrite it. To help you hunt for wordiness, here are some common sources that are easy to spot and fix.

Doublings

Avoid writing about a project's importance and significance when importance will do. Pairs of words with similar meanings add needless bulk to writing. Whatever the differences between theory and concepts, for example, they are not worth calling attention to if you just want to give a general idea.

"It is"

No two words hurt writing more than the innocent-looking it is. They stretch sentences, delay your point, encourage passive verbs, and hide responsibility. Unless it refers to something mentioned earlier, write around it is. "It is necessary that you revise ruthlessly" becomes "You need to revise ruthlessly." And the roundabout "It is realized" becomes the straightforward "We realize" or "I realize." Spare only natural expressions like "It is time to...."

Less common, but no less wordy, are the cousins of it is: there are and there is. "There are two alternatives mentioned in the report" becomes "The report mentions two alternatives." Similarly, "There is a helicopter pad on the ship" becomes "A helicopter pad is on the ship." You can avoid most of these beginnings with just a little rewriting.

Smothered Verbs

Weak writing relies on general verbs that take extra words to complete their meaning. When you write a

general verb like is, give, hold, and have, see if a nearby word will make a more specific verb. Here are some common smothered (and unsmothered) verbs: "The committee members held a meeting [met] to give consideration to [consider] the plan. They made the decision [decided] to give their approval to [approve] it." Make use of (Use) specific verbs. Avoid diluting the action words in your sentences.

"That and Which"

Look for thats and whiches to cut from your writing. Often those words do not help meaning or flow. Sometimes you can just drop either word: "We believe that the changes will help." Sometimes you will have to rewrite slightly: "a system which is reliable" becomes "a reliable system."

"The_____ion of"

Shorten words ending in -ion whenever the context permits. Instead of saying "I recommend the adoption of the plan," say "I recommend adopting the plan." And instead of saying "We want the participation of the command," say "We want the command to participate." Words ending in -ion are verbs turned into nouns. Writing is shorter when it favors verb (action) forms over noun (static) forms.

Wordy Expressions

Wordy expressions do not give writing impressive bulk; they litter it by getting in the way of the words that carry the meaning. Verbs and nouns do the real work; long linking phrases do not deserve the attention they receive. So, simplify forms of four common wordy expressions: in order to (to), for the purpose of (to), in the near future (soon), in the event that (if). These wordy expressions and others appear in the section, "Simpler Words and Writing."

Hut 2-3-4 Phrases

Although you should cut needless words, sometimes you can go too far. Avoid building hut 2-3-4 phrases, long clusters of nouns and modifiers. Readers cannot tell easily just what modifies what or when such clusters will end. You may have to use official hut 2-3-4 phrases like air traffic control radar beacon system, but you can avoid creating unofficial ones like computer programs advance information. Instead, write advance information on computer programs. And for rapid operational equipment distribution use rapid distribution of operational equipment. By increasing the number of words, you increase reading speed.

Specialized Terms

Like hut 2-3-4 phrases, the overuse of specialized terms is false economy. Avoid your job's shorthand with outsiders, and use it no more than you must with insiders. Spell out uncommon abbreviations and acronyms the first time they appear. If they will appear only twice, a good rule is to spell them out both times. The goal is to keep readers from pausing to decide your shorthand.

Natural Writing

To avoid a bloated bureaucratic style, make your writing more like speaking. Because readers hear writing, the most readable writing sounds like people talking to people.

Begin by imagining your reader is in front of you. If you are writing to many different people and none

in particular, picture one typical reader. Then write with the techniques that follow--the best of speaking.

Once you have written a draft, read it aloud. Take the time to revise. For most of us, good writing really means good rewriting. The effort is worth it and will help the many who must read your writing.

Respect Plain Words

Go out of your way to use small words. Issue directives, do not promulgate them, Start things, do not initiate them. Readers may know utilize means use and optimum means best but why force them to translate? You sell yourself in your writing. Come across as a sensible person, someone who knows that good English is plain English.

Prefer Short Transitions

Prefer short, spoken transitions over long, bookish ones. Use but more than however, also more than in addition, still more than nevertheless, so more than consequently or therefore.

The shorter transitions help set the right tone, a natural one, for the rest of what you say. Save the longer transitions for variety.

Ask More Questions

Reach out to your readers now and then by asking questions. A request gains emphasis when it ends with a question. In a long report, a question can be a welcome change.

Keep Sentences Short

For a variety, mix long sentences and short ones, but average 20 words or less. Although short sentences will not guarantee clarity, they are usually less confusing than long ones.

To-The-Point Writing

Much writing follows a pattern of organization that is easy on writers but hard on readers. Most of us write the way we think, by leading up to our conclusions. From a reader's perspective, it is the clue-by-clue pattern of mystery stories. A more helpful pattern is that of newspaper articles, which open with the most important information and taper off to the least important.

Open with Your Main Point

What is the one sentence you would keep if you could keep only one? That sentence is your main point. Whenever you can, start with that sentence.

Give commands before reasons, requests before justifications, answers before explanations, conclusions before details. Readers need to know your main point early so they can appreciate the relevance of whatever else you say. If no single sentence stands out, you may need to create one to keep from wandering aimlessly. Occasionally, as in a set of instructions or a reply to various questions, all your points may be equally important. In this case, start with a sentence that tells your readers what to expect: "These are the training quotas for FY 82."

Use Short Paragraphs

Important ideas are swamped in long paragraphs. Cover one topic completely before starting another, and let a topic take several paragraphs if necessary. But keep paragraphs short, down to roughly four or five sentences. Long paragraphs will divide where your thinking takes a turn. By adding white space, you make reading easier.

Call attention to lists of items or instructions by displaying them in subparagraphs. And when topics vary widely, use headings to catch your reader's eye.

Write Strong Sentences

Write emphatic sentences. For example,

not

> Reference (a) proposed double-coding 21 Navy billets. The rationale was that these billets then would have more candidates. This proposal is supported.

but

> We support double-coding 21 Navy billets, which reference (a) proposed.

or

> We support the proposal in reference (a) to double-code 21 Navy billets.

or

> We support the referenced proposal to double code 21 Navy billets.

The first (not) example wrongly gives the reference a major role as the subject of an independent clause. The remaining examples give the reference its proper minor role first in a dependent clause, then in a phrase, and finally in a single adjective. As emphasis on the reference decreases, emphasis on important ideas increases.

Emphasis also increases on words that begin and end sentences. The next sentence stresses soon:

> The course will be given to middle and senior managers soon.

Soon would receive less emphasis if placed in the middle of the sentence. If soon were the opening word, its emphasis would be compounded by its placement and the reversal of normal word order. Begin and end sentences with any words you like, but keep in mind that you can make important ideas stand out by positioning them strategically.

Keep Lists Parallel

In lists, stick to one pattern. By avoiding interruptions, you set up expectations that make reading easy. Violations of parallelism occur most often when writers mix the following:

Things and actions
Statements and questions
Active instructions and passive ones

The headings in this section form a list of active instructions. The list would lose its parallelism if instead of Keep lists parallel we used things (Paralled lists) or passives (Lists must be kept parallel). The trick is to be consistent. Make ideas of equal importance look equal.

After you have mastered this kind of parallelism, go on to subtle forms that involve balancing words with words, phrases with phrases, and clauses with clauses. You will find them discussed in any grammar text.

Active Writing

Write actively most of the time. Over 75 percent of the verbs in magazines and newspapers are active. Many writers, however, make 75 percent of their verbs passive. As a result, much writing is wordy, roundabout, and sometimes confusing.

Put Doers Before Verbs

To spot passive verbs, look for any form of to be plus the past participle of a main verb (a verb usually ending in -en or -ed). Here are some forms of to be: is, are, was, were, am, be, being, been. Passive verbs, then, look like these: was inspected, has been left, is being anchored, may be chosen.

Sentences written with passive verbs are wordy and roundabout. They reverse the natural, active order of English sentences. In the passive example that follows, notice how the receiver of the verb's action comes before the verb, and the doer comes after the verb.

Active: The skipper inspected the ship.
Passive: The ship was inspected by the skipper.

Besides lengthening and twisting sentences, passive verbs often muddy them. Whereas active sentences must have doers, passive ones are complete without them:

Nominations are approved beforehand. By whom?
Plans are being made. By whom?
You will be notified. By whom?

To avoid most passive verbs, find the doer of the verb's actions and put it before the verb. By leading with the doer, you automatically will follow with an active verb:

Supervisors must approve nomination beforehand.
We are making plans.
I will notify you.

You can sometimes avoid a passive verb without rearranging the sentence. Simply change the verb or drop part of it:

Passive: Your request has been received.
Active: Your request has arrived.

Active: Annapolis is in Maryland.
Passive: Annapolis is located in Maryland.

Write passively now and then--when you have a good reason not to say who or what does the action; readers understand the passive voice faster than the active voice when passives are appropriately used.

Write Direct Instructions

Instructions deserve special attention because we write so many of them, often with so many passives. When describing how to do something, talk directly to your readers by leading with verbs. Imagine someone has just walked up to you and asked what to do.

Passive: All safes will be checked.
Active: Check all safes.
Passive: Each dial must be spun.
Active: Spin each dial.

To improve instructions further, apply these next techniques:

State rules before exceptions.
Stress important points.
Choose exact words.
Say who does what.
Give examples of difficult ideas.
Divide processes into small steps.
Use headings, subparagraphs, parallel lists.
Answer likely questions.
Test your material.
Rewrite to avoid ambiguity.

Avoidance of Sexually Biased Language

Use the following guidelines to avoid language that is sexually oriented:

Avoid the use of sex references in job titles. Use crew member not crewman, employee not workman.

Avoid the use of male and female gender word forms such as aviator and aviatrix.

Include both sexes by using terms that refer to people as a whole. Use humanity not mankind.

Avoid the use of masculine and feminine pronouns and adjectives in referring to a hypothetical person or persons.

For example, "The average American worker spends 20 years of his life in the work force," can be changed to "The average American spends 20 years in the work force," or "Most Americans spend 20 years of their lives in the work force," or "An average American spends 20 years of his or her life in the work force. " In the first example, the sentence has been reworded to eliminate unnecessary gender pronouns and adjectives; in the second, the sentence is recast in the plural form; in the third, masculine or feminine pronouns or adjectives have been replaced.

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Abbreviations

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(Appendix B is a list of standard abbreviations)

When to use Abbreviations

Use abbreviations

To save space in tables, parentheses, brackets, footnotes, illustrations, and reference lists.
To avoid distracting the reader by needless repetitions.
When the reader is more familiar with the abbreviation than with the full expression.
When the use of an abbreviation is conventional.

Capitalizing Abbreviations

1. General Rule

In most cases, an abbreviation follows the upper- and/or lowercase format of words abbreviated.

Sunday (Sun.)
diameter (dia.)
quart (qt.)

2. Acronyms

Use all capitals for acronyms (except common acronyms now accepted as words, such as laser and radar).

Developmental Air Reports Tracker (DART)
research, development, test, and evaluation (RDT&E)

When spelling out an acronym in text, do not use initial caps with words that will form an acronym unless the letters are normally capitalized.

The data item description (DID)...
The project was designed to determine the feasibility of a submarine laser communication (SLC) system.

but

The Naval Command, Control and Ocean Surveillance Center (NCCOSC) RDT&E Division (NRaD) is one of the Navy's major...

3. In Figures

When all capital letters are used for callouts and labels of coordinates and curves, use capital letters for abbreviations. Exception: letter symbols in most units of measurement remain lowercase.

4. Navy Commands, Stations, and Offices

Capitalize the abbreviations of Navy commands, stations, and offices.

USN
NCCOSC
SPAWAR

but

DoD

5. Navy Rank

Capitalize abbreviations for Navy rank.

CAPT
CDR

When rank is spelled out and followed by a name, capitalize the initial letter only.

Captain K. E. Evans

Rank referred to in a general sense without reference to a specific person is lowercased.

Several captains were dining in the cafeteria.

Using Abbreviations in Text

6. First Use

Introduce abbreviations and acronyms that may be new or unfamiliar to the reader. Always spell out the term the first time it is used.

The Naval Command, Control and Ocean Surveillance Center (NCCOSC)...

Spell out the term when first used in the body of the report even if it is already spelled out in the summary or in the administrative information. Use the abbreviated form thereafter except in a long report; spell out unfamiliar terms at the beginning of each section.

7. Administrative Information Page

Treat the administrative information page as text. Spell out new or unfamiliar terms when first used. Spell out NRaD and names of sponsors. Do not use NAVSEASYSCOM or similar abbreviations for commands.

8. Abstracts and Summaries

Treat the abbreviations in abstracts and summaries as you would in text. Spell out new or unfamiliar terms.

9. Consistency Within Report

Be consistent in the system of abbreviations and the exact form used throughout the text (not psi in one place and lb/in in another).

10. Simple Units of Measurement

In text, spell out simple units of measurement (e.g., pounds, inches, grams, seconds, and feet) unless the units are used so frequently that the abbreviations are of value in saving space.

11. Multiple/Submultiple Units of Measurement

Abbreviate multiple/submultiple units of measurement when preceded by a number.

15 ml
45 psi

but

measured in milliliters
measured in pounds per square inch

12. Periods

Do not use periods with units of measurement unless the abbreviation might be confused with a regular word. Write out small words such as inch.

13. Singular and Plural Forms

Always use the singular form when abbreviating units of measurement.

15 lb

but

15 pounds

14. Parenthetical and Reference Material

Use abbreviations if necessary to save space in parenthetical material and footnotes. Write out the words for example and that is in text; you may use e.g. and i.e. for parenthetical material.

Using Abbreviations in Tables and Figures

15. Units of Measurement

Abbreviate units of measurement in tables and figures. Certain short words (e.g., ohm and day) should be spelled out.

16. Table Titles and Figure Captions

Use abbreviations in table titles and figure captions to save space. Such abbreviations must be consistent with any used in the table or figure callouts or listed in the table of contents. However, do not abbreviate the words table or figure in the text reference, in the figure caption, or in the table title.

17. General Terms

Abbreviate other terms when necessary to gain space. For abbreviations that may be unfamiliar to the reader, define the abbreviations in a footnote to the table or on the figure page.

Using Abbreviations and Accronyms in Titles and Headings

18. Abbreviations in Titles and Headings

Avoid abbreviations in titles and headings. Use only if the term is abbreviated by convention or if the complete term would be too long or awkward.

19. Acronyms in Titles and Headings

Spell out unfamiliar acronyms if first used in a title or heading unless the complete definition is too long or awkward. In this case, spell out the acronym in the text immediately following the heading or use an asterisk and spell out the acronym under the title.

Spacing Abbreviations

20. Abbreviations with Periods

Set abbreviations containing periods without spaces.

U.S.

21. Initials of Personal Names

Retain space in initials of a personal name.

K. E. Evans

22. Compound Terms

Space the parts of a lowercase abbreviation of a compound term if no period is between them.

mol wt
sp gr

23. Abbreviations with Numerals

Leave one space between numerals and the abbreviation.

75 ft
75 W

24. Symbols with Numerals

Set the following symbols close up to numerals:

money -- $5, 5
percent -- 5%

The percent sign (%) may be used in text (as well as in tables and figures) rather than spelling out the word percent. Be consistent.

25. Refer to both men and women in generic terms, such as economist, doctor, or lawyer. Use pronouns to identify a person's sex: the lawyer made her final summation.

26. Avoid the use of stereotyped terms or expressions such as mansized job; use workhours and workyears not manhours and manyears.

27. Use artwork that depicts both men and women and shows them in a variety of roles.

28. Avoid the generic he (which is usually used after terms such as reader, employee) by pluralizing the antecedent, using both he and she, or recasting the sentence.

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Capitalization

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When Not to Capitalize

If you don't have a good reason to capitalize, don't. Given a choice, use lowercase. Do not capitalize solely for emphasis.

Watch out for phony proper names; terms like naval base and bioassay should not be capitalized.

Using Capitals Correctly

1. Headings

Although format for headings may vary for special cases, NRaD's present format uses all caps for first- and second-order headings in a document. Third- and fourth-order headings in NRaD documents are set in initial caps.

2. Articles, Prepositions, and Conjunctions

Unless used as the first word, do not use initial caps for the following words in document titles, third- and fourth-order heads, formal titles of people, facilities, or programs.

Articles: a, an, the

Short prepositions: at, by, down for, in, of, on, up, to, with

Conjunctions: and, but, if, or, nor, for, yet

NOTE: Prepositions of five or more letters (e.g., between, through, within) are usually capitalized in titles.

3. Text References to Figures, Tables, and References

Except at the beginning of a sentence, do not use an initial cap for figure, table, and reference in text.

Figure 1 shows ...
The radar hole shown in figure 1...
Frequency plots (figure 1)...

4. Figure Captions and Table Titles

Use sentence style for figure captions and table titles. Capitalize the initial letter of figure or table and the initial letter of the first word of the caption or title. All other words are lowercased unless normally capitalized.

Figure 1. Camera view of the escape hatch.

Figure 2. Aerial view of the Naval Command, Control and Ocean Surveillance Center.

Table 1. Specifications for test equipment.

Table 2. NRaD document organization.

5. Navy and Government Usage

Use an initial cap for Navy when it refers to the U.S. Navy.

the Navy
Navy officer

Do not use an initial cap for navy when it is standing alone or used collectively.

Many of our allies have active navies.
Do not use an initial cap for naval unless it is part of a proper name.
the naval base, the naval force

but

Naval Command, Control and Ocean Surveillance Center

Use an initial cap for Fleet when it means the United States Fleet.

Atlantic Fleet
6th Fleet
The Secretary of the Navy requested funding to add more ships to the Fleet.

but

a fleet of ships

Use an initial cap for government only if used as part of a proper name or as a proper name.

The U.S. Government Printing Office
the U.S. Government

but

the cost of government
the government
government activities

6. Organizational Units

Use initial caps for formal names of departments, divisions, and branches.

Surveillance Department
Acoustic Systems and Technology Division
Acoustic Analysis Branch

Use initial caps for formal titles of persons.

The matter was referred to R. T. Shearer, Technical Director.

7. Names of Facilities

Use initial caps for formal names of facilities.

Surveillance Test and Integration Center

but

low-light-level test facility

8. Names of Programs and Projects

Use initial caps for formal names of unique programs and projects.

the Over-the-Horizon Targeting program

but

a high-efficiency dye laser program

9. Names of Weapons

Use initial caps for the full or officially abbreviated names of weapons, including parts of weapons or proposed weapons. Do not capitalize the unofficial form.

Mk 116 (Mod 7)
Torpedo Mk 46

but

Mk 46 torpedo

10. Trademarks

Use initial caps for the trade names but not for the common nouns that follow, unless they are part of the trade name itself.

Xerox machines

11. Computer Terms

For hardware, use names assigned by manufacturers.

Use all caps for programming languages formed as an acronym.

BASIC
COBOL
FORTRAN

but

Ada
Pascal
(These are not acronyms, but actual names.)

12. Scientific Names of Genera

When a Latin name is given for plants and animals, the genus name has an initial cap; the species name is lowercased.

Tursiops truncatus
Populus tremuloides
(For further information, see section on Italics.)

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Compounds

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(Appendix C is a quick reference for preferred spelling.
See the GPO Style Manual for a comprehensive list of compound words.)

Compound Adjectives (Unit Modifiers)

1. Use or Nonuse of Hyphen

When forming unit modifiers, determine if the use or nonuse of the hyphen will convey the intended meaning. Consider the following compounds and their meanings:

blue-green algae (colors are of equal importance--use hyphen)
bluish green paint (first element modifies the second--no hyphen)

2. Adverbs

Use a hyphen in compound adjectives consisting of an adverb plus a present or past participle.

ever-rising flood
well-kept facility

Do not use a hyphen in compound adjectives consisting of an adverb ending in ly.

highly stable craft
entirely new method
carefully made pattern

Do not use a hyphen in a three-word compound adjective when the first two elements are adverbs. not too distant future

usually well preserved specimen

3. Numbers and Units of Measurement

Use a hyphen in combinations of numerals and units of measurement used as compound adjectives. Always use the singular form of the unit of measurement.

a 2-ton capacity
in 100-foot rolls
a 2-millimeter-wide ribbon

Note that the following are not compound adjectives and are not hyphenated.

a capacity of 2 tons
in rolls 100 feet long
a ribbon 2 millimeters wide

4. Compound Nouns Used as Adjectives

When using compound nouns as adjectives, keep the solid forms of compound nouns, keep the hyphens in permanently hyphenated nouns, and keep the separated forms of multiple-word nouns and proper nouns.

Solid compound

airspeed calculations
downdraft velocity

Hyphenated

Mock-up assemble
law-abiding citizen

Separated

China Lake population
civil service employees

Compound Verbs

5. Prefixes

Do not use a hyphen in most compound verbs formed with prefixes. Write solid.

to overhang
to counterattack

6. Adjective Plus a Noun

Use a hyphen in most compound verbs formed with an adjective plus a noun.

to cold-chisel
to double-track

7. Adjective Plus a Verb

Use a hyphen in most compound verbs formed with an adjective plus a verb.

to cold-roll

8. Noun Plus a Verb

Use a hyphen in most compound verbs formed with a noun plus a verb.

to plane-polarize
to sun-dry

9. Verb Plus an Adverb or Preposition

Do not use a hyphen in a compound verb formed with a verb plus an adverb or preposition. Write as separate words. Note that in other forms the same words may be written solid or with hyphens. Check Webster's Third or the GPO Style Manual if in doubt.

As verb

to break down

As noun

to cut off

As adjective

to write up

As noun

a breakdown
a cutoff
a write-up

As adjective

a breakdown voltage
a broken-down part
a cutting-off action
a cutoff point

Compounds with Prefixes

10. Standard Prefixes

Do not use a hyphen in most compounds formed with an independent word and a standard prefix. Write as one word. Check Webster's Third and the GPO Style Manual for a listing of standard prefixes and examples. The following examples include both noun and adjective compounds.

antiaircraft,finlike multiform,clockwise, gigacyles,piezoelectric, endothermic, microsecond, prefabrication

11. Exceptions

While most compounds with standard prefixes are written as one word, use a hyphen when the base word has an initial cap

un-American
post-Reagan

the base is a number

pre-1914

the base is an abbreviation

pre-IBM

the prefix is combineed with more than one word

non-English-speaking Americans

needed to clarify meaning

un-ionized vs. unionized
re-form vs. reform

needed to prevent double identical vowels or other confusing sequences of letters

anti-icer
non-native

(Some common words such as cooperate and coordinate are written without the hyphen.)

a prefix stands alone

over- and underused equipment

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Italics

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Introduction

Use italics to differentiate or to give greater prominence to words and phrases. Italics are signified by underlining in handwritten or typewritten manuscripts.

General Rules

1. Foreign Words, Phrases, and Abbreviations

Italicize foreign words used in an English context, except words that have become part of our language.

His *raison d'etre* was sailing.

Familiar words and phrases in a foreign language should be set in regular type.

hors dbeuvre, terra firma

2. Titles of Publications and Related Works

Italicize titles of books, journals, periodicals, newspapers, motion pictures, plays, and other works published separately. (For more information, see section on References.)

3. Names of Vessels, Aircraft, and Spacecraft

Italicize the names of aircraft, vessels, and spacecraft. Missile and rocket names are not italicized. Do not italicize abbreviations such as USS or HMS preceding vessel names.

USS *Enterprise*
Spirit of St. Louis
Voyager 2
F-18 *Hornet*
Yankee-class submarine

but

Tomahawk
DD 882

NOTE: Ship hull numbers should not be hyphenated in NRaD publications; simply leave one space between the type designator and the ship number. Also, it is not necessary to use the article the before the name of a ship unless the ship's name is an adjective modifying a following noun.

The test began onboard USS *Fort Fisher.*
The procedure used for sampling during the USS *Tuscaloosa* survey was very similar to that used for USS *Fort Fisher.*

Use initial caps, but dont italicize designations of models, names of trains, and names of space programs.

Boeing 707
Orient Express
Project Apollo

4. Scientific Names

Italicize scientific names of genera, subgenera, species, and subspecies.

Phoco vitulina
Felis leo
Rosa rugosa

Use regular type for the names of groups of higher rank than genera (phyla, classes, orders, families, and tribes).

Print other designations following generic, specific, or subspecific names in regular type.

Stenella spp.
Quercus alba L
Magnolia grandiflora Innaeus

5. Mathematics

In mathematical equations, use italics for all letter symbols (caps, lowercase, superscripts, and subscripts). Use regular type for all numbers.

Print chemical symbols, units of measurement, and abbreviations such as log, max, exp, tan, cos, lim, etc., in regular type.

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NRaD TD1064

Writing and Editorial Guidelines

Revision 1

July 1994

Numerals

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(Check the GPO Style Manual for a complete treatment of numerals.)

General Rules

1. Numerals Versus Words

In general, use words for numbers one through nine and numerals for larger numbers.

four radios
10 radios
nine tests
15 tests

2. Mixture of Numerals and Words

When a sentence contains 2 or more numbers, and 1 of them is 10 or more, use numerals for each number.

The table listed 15 items to be distributed to 3 people.

3. Numerals

Use numerals for units of measurement, time, or quantity; lists or compilations of statistical data; and nomenclature of programs or hardware.

1 meter
2 fiscal years
8 by 12 inches
Mk 5 Mod 1

4. Arabic Versus Roman

Use Arabic rather than Roman numerals except in special circumstances (e.g., pagination of front matter).

5. Ordinal Numbers

Treat ordinal numbers as you would cardinal numbers. Spell out first through ninth. Use numerals beginning with 10th.

first revision
89th test

Ordinal numbers may be spelled out in titles of formal publications.

Proceedings of the Fifteenth Technical Communication Conference

6. Repeating Spelled-Out Numbers as Numerals

Except in legal documents, do not repeat spelled-out numbers as a numeral in parentheses.

four missiles

not

four (4) missiles

15 missiles

not

fifteen (15) missiles

7. Use of Commas

In numbers of two to four digits, run the numerals together.

1028
9876

In numbers of more than four digits, use a comma between each group of three digits.

10,000
456,789
1,245,683

NOTE: In some cases, a half space can be inserted instead of commas to avoid confusion when the document may be used in foreign countries.

10 000
456 789
1 245 683

When to spell out numbers

8. Numbers Nine and Under

Spell out numbers below 10 that do not represent precise measurements or are not grouped for comparison with number 10 and above.

two or three times
five trials
one-tailed
three-dimensional
three-way interaction
six sessions
nine pages

9. Number Beginning a Sentence, Title, or Heading

Spell out any number that begins a sentence, title, or heading.

Nineteen units were installed.

not

19 units were installed.

Rephrase when possible.

NRaD installed 19 units.

10. Common Fractions

Spell out common fractions and approximate values.

one-third of the class
two-thirds majority
about half full

11. Round Numbers

Substitute a word for a part of a large number ending in several zeros.

12 million

not

12,000,000

12. Awkward Expressions of Measurements

To avoid awkward expressions of measurement or to save space in tables and figures, add a prefix to the basic unit of measurement.

26 mg

not

0.026 g

50 km

not

50,000 meters

13. Zero and One

Spell out the numbers zero and one when the words would be easier to understand than the figures or when the words do not appear with numbers of 10 or more.

zero-base budgeting
one-line sentence

but

Use the numerals when the zero and one modify a unit of measurement or time.

1 foot
0-second delay

but

zero miles

When to use numerals

14. Numbers 10 and Over

Use a numeral for a single number of 10 or more.

10 missiles
258 systems

Use numeral for groups of two or more numbers or for related numbers, if any one number is greater than nine.

Each of 15 scientists (9 from NRaD and 6 from NAWC) was given an award.

Use numerals for any numbers, above or below 10, that are followed by units of measurement, time or

quantity, or special nomenclature for programs or hardware.

5 pounds, 4 seconds, 37 feet, Mk 5 Mod 1

15. Ages

Use numerals.

6 years old

16. Angular Measurement

Use numerals.

45 degrees
a 10-degree dive angle

NOTE: Use the word degree in text or its abbreviation deg for angle and temperature readings in figures and tables; always use the degree sign for latitude/longitude values. You may use the degree sign for temperature when necessary to save space.

370N 250W

17. Chemical Formulas

Use numerals for numbers occurring in chemical formulas and in the names of elements and compounds.

uranium 235

18. Dates

Use numerals.

15 May 1986
FY 87

19. Decimal Quantities

Use numerals.

25.5g

Use a zero as a placeholder when a decimal number is between +1 and -1, except when the measurement is in caliber or when expressing a quantity that cannot exceed unity, such as probability.

0.75 inch
-0.24 volt

but

.22 caliber
.35 probability

20. Fractions

Fractions standing alone or followed by of a or of an are generally spelled out.

one-tenth
one-half of a farm
one-half inch

Use numerals for fractions in a unit modifier.

1/2-inch pipe

Where possible, change fractions to decimals.

2.5 million

not

2 1/2 million

21. Mathematical Expressions

Use numerals.

8a + 2b + 19c = 122
divide by 7

22. Money

Use numerals for exact sums and prices.

He paid $8.10.

not

He paid eight dollars and ten cents.

Whole-dollar amounts may be written without added zeros.

$8 $280
$4 million

23. Names of Programs and Hardware

Follow accepted or specified usage for names of programs and hardware.

Mk 46 Mod 7 Phase 1

not

Mk 46 Mod VII Phase 1

Use superscript when possible

not

C3 or C(3)

24. Page, Reference, Figure, Table, or Section Numbers

Use numerals for numbers in serial designations.

page 22
reference 2
figure 3
table 6
section 5

25. Ratios

Use numerals for ratios.

1 to 4

or

1:4 (preferred)

26. Scales

Use numerals for scores and points on a scale.

The score was 4 on a 7-point scale.

27. Temperature

Use numerals to express temperature values.

36 degrees Fahrenheit
0.450C
21000F
9 to 110K or 9 to 11K (without degree sign)
60, 80, and 1200F

11,0000F

28. Time

Use numerals for measurements of time, including clock time.

5 seconds
7 minutes
9 hours
4 days
6 months
11 years

When using a 24-hour clock, do not add hours, and do not add a colon.

0730
1645

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NRaD TD1064

Writing and Editorial Guidelines

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Punctuation

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Apostrophe

1. Showing Possession

Use an apostrophe to form the possessive.

In singular nouns:

John's
the machine's
Jones's

In plural nouns:

the machines'
men's
Joneses'

NOTE: It is acceptable to make an inanimate object possessive (e.g., the machine's specifications). Authors objecting to this practice may write the specifications of the machine or the machine specifications.

2. Pluralizing Dates and Abbreviations

Do not use an apostrophe to form the plural of a date or an all-capital abbreviation.

during the 1980s
AEs (acoustic evaluators)

Brackets

3. Enclosing Matter in Math

In math, use brackets, [ ], to denote enclosed matter treated as a unit. Use braces, { }, when necessary in long equations. Make sure the brackets and braces are long enough to contain the enclosed mathematics.

4. Parenthecizing Material Within Parentheses

In text, use brackets as parenthetic marks within parentheses ([ ]).

5. Adding Editorial Comments

When quoting material, use brackets to enclose corrections, omissions, explanations, editorial comments, or interpolations not specifically a part of the original quotation.

> "The bill had *not* been paid [emphasis added]."
> "The statue [sic] was on the statute books."

Bullets

6. Listing Examples

Use bullets to draw attention to examples.

7. Using Numbers or Bullets

If a list has sequential significance or will be referenced, use numbers or letters to enumerate the items.

Three assistants were chosen:

1. researcher
2. writer
3. typist

If only a representative sample of items is listed, use bullets.

Here are just a few of the many beneficial features of the new budget cut:

- Personnel spend fewer workhours requesting equipment and supplies.
- Supervisors spend fewer workhours recruiting and training new personnel.
- Personnel and supervisors spend fewer workhours justifying and evaluating requests for salary increases.

Colon

8. Introducing Series

Use a colon after a complete sentence that introduces a list or series of items.

> He needed three assistants: a researcher, a writer, and a typist.

Expressions such as the following or as follows often precede a list.

The three assistants are as follows: a researcher, a writer, and a typist.

Do not use a colon if the sentence is continuous without the colon.

The three assistants are a researcher, a writer, and a typist.

9. Introducing Clauses

Use a colon to introduce a clause that explains, reinforces, or gives an example of a preceding clause or expression.

Until recently, American industry used the U.S. Customary System of linear measure as standard: The common unit of length was the yard.

Comma

10. Separating Items in a Series

Use commas between items in a series.

We need the three modules, the digital generator, and the voltmeter.

Use a comma before a final conjunction (and, or, or nor) to show that the final item is of equal value to the other items and not part of a set of the last two items.

11. Separating Introductory Phrases

Use a comma after an introductory adverbial clause.

After completing the first phase of testing, the researchers evaluated the results.

Use a comma after an introductory infinitive phrase.

To understand his conclusions, read his report.

Use a comma after a short introductory phrase to prevent confusion or misreading.

In 1985, 240 scientists worked on the project.
In general, experiments such as these rarely work.

12. Enclosing Appositives and Nonrestrictive Clauses

Use commas to enclose appositives.

Mr. Green, the lawyer, spoke for the defense.

Use commas to set off a nonrestrictive clause (which is mainly descriptive and could be dropped without changing the reference of the noun).

Nonrestrictive (nondefining):

The report, which was well documented, was discussed with considerable emotion.

My brother, who lives in Alaska, is 39. (No other brothers; phrase does not limit)

Do not use commas to set off a restrictive clause (which limits the reference of the noun in a way that is essential to the meaning of the sentence).

Restrictive (defining):

The report that the committee submitted was well documented.

My brother who lives in Alaska is 39. (I have another brother who lives in New York.)

13. Separating Independent Clauses

Use a comma between independent clauses (complete thoughts) joined by the coordinating conjunctions and, but, or, and yet.

Fish were plentiful, and turtles frequented the shores.

He overhauled the equipment, but it still did not work.

14. Using One Subject with Two Verbs

Do not use a comma to separate the subject from the second verb.

The print shop prints and distributes reports.

not

The print shop prints, and distributes reports.

15. Punctuating Numerals

In numbers of more than four digits, use a comma between each group of three digits.

10,000
456,789
1,245,683

In numbers of two to four digits, omit the comma.

1024
9876

(See section on Numerals for more information.)

16. Punctuating Dates

In text, use a comma to separate the month and day from the year. (No comma is needed for day/month/year format.)

June 9, 1985

but

9 June 1985
June 1985

Use a comma to separate the year from the following text.

On 9 June 1985, the court ruled in his favor.
The date October 10, 1983, will always be special to me.

17. Punctuating Addresses

Use a comma to separate the city from the state.

San Diego, CA

Use a comma to separate the state from the following text.

He lives in San Diego, California, 3 months a year.

Do not use a comma to separate the state from the zip code.

Write to me at 1234 Ash Street, San Diego, CA 92101.

Dash

The most commonly used dash is the em dash, which, in typing, is designated by two hyphens. In the following material, the em dash is referred to simply as a dash.

18. Representing a Dash in Typed Copy

Use two hyphens set tight to represent a dash when preparing copy on a typewriter. Do not add a space before or after the dash.

19. Showing Sudden Break in Thought

Use a dash to mark a sudden break or shift in thought. Use sparingly.

He said--and no one contradicted him--"The battle is lost."

20. Setting Off a Series of Appositives

A dash may be used to set off a series of appositives.

These are shore deposits--gravel, sand, and clay--but marine sediments underlie them.

21. Using the En Dash

The en dash is longer than a hyphen and about half the length of an em dash. (When typing, use the hyphen with a space before and after it to denote an en dash.)

Use an en dash to indicate continuing, or inclusive, numbers (dates, times, or reference numbers).

1968-72
May-June 1987
pp. 38-45

but

from 1968 to 1972
from May to June 1987
between 0700 and 1600

Use an en dash to connect two coordinate elements.

water-air interface
It was an Army-Navy project.

Ellipses

22. Indicating Omitted Words

Ellipses indicate that words have been omitted from quoted material. Use three spaced periods to indicate missing words at the beginning or middle of a sentence.

". . . spend $4200."
"The average family spent $3500 on food . . . in 1979."

If one or more words are omitted at the end of a sentence, use three spaced periods followed by the necessary end punctuation for the sentence as a whole.

"Can anyone explain . . . (Original question read, "Can anyone explain why this was so?")

Hyphen (See section on Compounds.)

Parentheses

23. Setting Off Subordinate Material

Use parentheses to set off material not part of the main statement or not a grammatical element of the sentence, yet important enough to be included.

Redundancy introduces problems of additional cost, size, weight, and complexity (more components to fail).

24. Marking Items in a List with Numbers or Letters

Use parentheses to enclose numbers or letters that mark items in a list.

Factors contributing to these costs are (1) design complexity, (2) equipment failure, and (3) equipment maintenance.

NOTE: Parentheses should always be used in pairs, not singly.

25. Enclosing Text Citations

Use parentheses to enclose text citations of references, figures, tables, and other pages.

The controller places the command word on the output line (figure 3).

26. Punctuating Sentences Within Parentheses

Do not capitalize the first word of a sentence enclosed in parentheses within a sentence.

The table lists the allowable loads on each beam in kips (a kip is 1000 pounds).

Omit the end punctuation in a sentence enclosed in parentheses within a sentence.

Contaminants deposited on circuitry can cause corrosion (this is accelerated by high humidity) and restrict air flow.

but

If the parenthetical matter is a separate, stand-alone unit, capitalize the first word and place the end punctuation inside the closing parentheses.

The regular heating system will be sufficient. (Infrared heaters are available for spot heating.)

Period

27. Omitting Periods

Do not use periods after the following:

capital-letter abbreviations of military ranks and government agencies

CAPT
FBI

but

U.S. Government
U.S. Congress

Omit the period after:

abbreviations of units of measurement (km, yd, lb)
headings and entries in tables
scientific, chemical, or other symbols (CO_2, NaCl)
titles, except figure and table titles presented in sentence style

28. Punctuating Figure Captions and Table Titles

Use a period in figure captions and table titles.

29. Punctuating Lists

In lists, use periods after entries that consist of a sentence, but omit periods after phrases or single-word items. If any entry requires a period, all other entries should also be written to be full sentences that end in a period. Note that it is preferable to make lists parallel--all phrases, all sentences.

He needed four things at the store:

1. bread
2. milk
3. potatoes
4. butter

but

Her principles of success are simple:

Life is too short to worry.
Money is nice to have.
People are basically generous.

Quotation Marks

30. Using Material from Other Sources

Use quotation marks to indicate exact material derived from another source. (See section on References.)

31. Emphasizing Words and Phrases

Avoid using quotation marks for emphasis.

32. Quoting Within Quotations

Use single quotation marks for a quotation within a quotation.

Smith noted that the "results called `absurd' by Dr. Smith in 1923 are now considered standard."

33. Punctuating Within Quotations

Always place a period or comma within closing quotation marks.

"The problem," Smith insisted, "is only a problem for those people who make it a problem." His article, "Sonar Capabilities of Cetaceans," is 35 pages long.

Always place a colon or semicolon outside quotation marks.

I just finished reading the article entitled "Hacker"; the main character is a complex person.

34. Signaling Special Usage of a Word or Expression

Do not use quotation marks to enclose expressions following such terms as called, known as, and so-called unless such expressions are misnomers or slang.

The experiment was called a failure by many people in the department.

but

The experiment was called "another Murphy" by those who knew.

Semicolon

35. Punctuating a Series Containing Internal Punctuation

Use a semicolon to separate items in a series containing internal punctuation.

The new members were Brady Nee, president; Corkren Samuels, vice-president; and Tony McBride, secretary.

36. Separating Independent Clauses

Use a semicolon to separate an independent clause containing a list of examples from the preceding independent clause when the list is introduced by words such as that is, for example, and for instance.

Many great writers had to overcome severe physical handicaps; for instance, Milton, Pope, and Joyce were all handicapped.

Use a semicolon to separate independent clauses not joined by a coordinate conjunction (and, but, or).

There are four blood types; the most common are O and A.

NOTE: If the clauses of a compound sentence are very long or are themselves subdivided by commas, you may use a semicolon between the clauses (even if they are joined by a conjunction).

Use a semicolon to separate independent clauses joined by a transitional connective (also, however,

moreover, nevertheless, then, thus, for example, in fact).

> We have considered the historical background of the period; thus, we can consider its cultural achievements.

Slant (Slash)

37. Replacing Common Conjunctions

Avoid using the slant between words in text to replace a common conjunction.

> system and equipment

not

> system/equipment

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References

1. References

References document material used from other sources. Sources are cited in the text and documented in a list of references. For unclassified documents, NRaD prefers the author-date system described in this section. The number system must be used for classified reports.

2. Bibliographies

Bibliographies list supplemental or background literature that may be of interest to the reader. Sources are not cited in the text. For simplicity, use the same author-date format in bibliographies as you use in references.

3. What to Reference

Direct quotations, paraphrases, quantitative data, and ideas must be documented when borrowed from other sources.

The same format is used to list both reference and bibliographic citations.

4. Informal References

The following sources are not formal references and should not be listed on the reference page:

Personal communications
Personal correspondence
NRaD Technical Notes (TNs)

Personal correspondence and communications are not retrievable. They may be referenced in footnotes but not in the reference list.

As working documents, NRaD TNs are not acceptable references for a formal document. If an NRaD TN must be referenced, include a footnote on the page that states the following:

> NRaD Technical Notes (TNs) are working documents and do not represent an official policy statement of the Naval Command, Control and Ocean Surveillance Center, Research, Development, Test and Evaluation Division. For further information, contact the author.

5. Author-Date System

NRaD prefers the author-date system of documentation for unclassified reports. Author and publication dates are cited in the text in parentheses. Each text citation is keyed to a full citation listed at the end of the report.

> The measurements made by Smith (1983) have been proven.
> Measurements from the test (Smith, 1983) have been proven.

6. Number System

In the number system, an Arabic numeral is given to each reference in text. Each number is keyed to a full citation listed at the end of the report. Full citations are listed in the order in which they are first cited in the text. The order of elements of citations in the reference list is the same as the author-date system except that the publication date is placed at the end of the citation.

> The measurements made by Smith (reference 1) have been proven.
> Reference 2 gives detailed proof of the measurements.

The number system for references is NRaD's alternate reference style. Under special circumstances, your editor may choose the number system as being more appropriate for your publication. The number system must be used for classified documents.

7. Full Citations in Text

Do not use footnotes or parenthetical references in text for full documentation of sources.

8. Special Publications (e.g., journal articles, symposia proceedings)

When writing for journals or symposia proceedings, follow the reference format required by the style sheet of the publication. Use NRaD format when referencing journal articles or symposia proceedings in a NRaD publication.

References in text (author-Date System)

9. Basic Format

Enclose in parentheses the author's last name and the date of publication of the work.

> (Jones, 1986)

Do not enclose the author's name in parentheses if the name is incorporated in the sentence.

> Jones (1986) proposed the tiffgreen theory.

10. Placement in Sentence

Place the reference before the end punctuation or at a logical place in the sentence.

> The placebo effect disappeared when the behaviors were studied in this manner (Watson, 1987).
> Two researchers (Jones & Smith, 1986) found similar results.

11. Page References

Place any reference to page, chapter, figure, table, or equation in the text citation. When using a direct quotation, always give the page number.

(Jones, 1986, pp. 2-3)
(Smith, 1980, p. 21)

12. Abbreviations

Use the following abbreviations when referring to specific page numbers, chapters, figures, tables, or equations in the text citation:

page p.
pages pp.
chapter chap.
equation eq.
editor Ed.
editors Eds.
Edition ed.

13. Single Author

When you cite work by a single author, give the author's surname and the year of publication each time you make a textual reference to the work.

Another study (Christiansen, 1966) has shown that . . .
Jensen (1986) concluded that...

14. Two Authors

For references with two authors, cite the surnames of both authors and the year of publication for each text reference. In parenthetical and tabular material, join the names with an ampersand (&). In running text, join them with and.

A recent study (Smith & Jones, 1986) shows. . .
Smith and Jones (1986) show . . .

15. Three Authors

When your reference has three authors, cite the three surnames and the date of publication of the work the first time the reference is cited. In subsequent citations, cite only the surname of the first author, followed by the abbreviation "et al.," and the date of publication.

First citation:

Smith, Jones, and Gossamer (1979) found . . .
A previous study (Smith, Jones, & Gossamer, 1979) shows . . .

Subsequent citations:

Smith et al. (1979) found . . .
The study previously cited (Smith et al., 1979) shows . . .

NOTE: If two references published in the same year would shorten to the same form, cite all three

authors each time to avoid confusion.

16. Four or More Authors

When your reference has four or more authors, cite the surname of the first author and the date of publication in the first and any subsequent citation. For example, to cite a work by Hughes, Jensen, Stephens, and Lentz:

> Hughes et al. (1981) based their model on . . .

NOTE: If two or more references published in the same year would shorten to the same form, cite all authors of each reference in full each time to avoid confusion.

17. Multiple Citations of Same Author

If two or more references by the same author appear at the same point in the text, cite the author's surname followed by dates of publication arranged chronologically.

> (Anderson, 1981, 1983, 1987)

In citing more than one work by the same author in a single year, repeat the year for each work with the suffixes a, b, c, etc. These same suffixes should be used in the reference list. If any of the references are still in press, cite them last.

> (Li, 1978, 1979, 1980a, 1980b, in press-a, in press-b)

18. Identical Surnames

When different references have two or more authors with the same surname, include their initials in the citation.

> Winger, J.R., and D.B. Burns (1980) found . . .
> Winger, P.Q., and L.O. Burns (1981) found . . .

NOTE: This rule applies even if publication dates differ.

19. References Cited Together

Use a semicolon to separate references cited sequentially.

> Two reports (Smith, 1985; Jones, 1986) confirm the finds.
> The previous studies (Winger, J.R., & D.B. Burns, 1980; Winger, P.Q., & L.O. Burns, 1981) found . . .

20. Corporate Authors

Cite the full name of the agency, institution, or group and the date of publication. The Center for Communications (1986) outlined three new programs.

> Three new programs were outlined in the report (Teledyne Corporation, 1985).

Reference Lists

21. Location

Place the reference list or bibliography after the main text. In a publication having both a list of references and a bibliography, the references precede the bibliography.

An appendix, if necessary, will always follow the main reference list or bibliography. If an appendix cites references, prepare a separate reference list for that appendix.

22. Information Required

Each entry in the reference list must include all information necessary for identification and retrieval.

23. Alphabetical Arrangement

References are arranged alphabetically in a single list by last names of first authors. Although first authors are listed last name first, second and subsequent authors are listed in normal order. Alphabetize word by word. Thus, Brown, J.R., precedes Browning, A.R.

Alphabetize the prefixes M', Mc, and Mac literally. Thus MacArthur precedes McAllister. If a prefix (de, la, du, von) is part of the surname (de Gaulle, Van Matre), alphabetize by the prefix.

24. Order of Elements and Examples

Authors' names are followed immediately by the dates of publication. The order of other elements varies according to the type of citation and elements included. See examples given in this section.

Books

Name of author.
Year of publication.
Chapter title (if necessary).
Title of book. (in italics)
Volume number (and title of volume if applicable).
Page number(s) (if necessary).
Name of editor if applicable (signify by Ed. or Eds.)
Edition used (if not the first).
Publisher and place of publication.

Basawa, I.V., and B.L.S. Rao. 1980. *Statistical Inference for Stochastic Processes,* pp. 52-53. Academic Press, Inc., New York, NY.

Jones, W., Jr. and C.A. Hart. 1983. "Adult Development of the Walrus." In *Handbook of Walrus, Sea Lions, and Seals,* pp. 173-182, C.C. Pane, Ed. Little, Brown, and Co., Chicago, IL.

Winckler, J.R. 1981. *Artificial Particle Beams in Space Plasma Studies,* p. 3. Bjorn Grandal, Ed. 3rd ed. Plenum Press, New York, NY.

Journal Articles

Name of author
Year of publication
Title of article
Title of journal (in italics)
Volume number (and month if desired)
Issue number (if available)
Inclusive page numbers (if used)

Lin, P.J., and L.A. Bursill. 1982. "High-Resolution Study of Ferroelectric Domain Boundaries in Lithium Tantalate," *Philosophical Magazine* 45:911-928.

Doe, G.E., and P.S. Roe. 1952. "The Development of the Betatron," *American Journal of Physics* 20 (Mar):298.

In an alternate style of listing journal articles, you may abbreviate volume, number, and page. Do not mix the two styles in any one reference list.

Doe, G.E., and P.S. Roe. 1952. "The Development of the Betatron," *American Journal of Physics,* vol. 20, no. 7, p. 298.

Reports

Name of author (or agency name if no specific authors)
Year of publication
Title of report (and title classification [only when in a list of classified and unclassified reports])
Report number (and month if desired)
Name of organization
Location of organization
Classification of report (only when in a classified report or an unclassified report with classified and unclassified references)*

Simon, G.S. 1985. "Development of a 50-Watt Traveling-Wave Tube (U)," NOSC TD 2055 (June). Naval Ocean Systems Center, San Diego, CA. CONFIDENTIAL.

Catalano, E. 1981. "Overview of Gas Centrifuge Scoop Material Chemistry," UCRL-87051. Lawrence Livermore National Laboratory, Livermore, CA.

Published Proceedings

Name of author
Year of conference
Title of paper
Editor's name (if applicable)
Title of proceedings (in italics)
Page number(s)
Date of conference
Place of conference
Publisher (if any)
Place of publication (if available)

Chaddwick, T.E., and C.L. Hamilton. 1980. "Prolonging Battery Life in Underwater Vehicles." *Proceedings of the Fifteenth International Symposium on Batteries* (pp. 83-92). September 8-10, Vancouver, British Columbia, Canada. Mitchell Press.

Unpublished Conference Papers

Name of author
Year of conference
Title of paper
Name of conference
Date of conference
Place of conference

Ronchetto, J.J. 1981. "Ultrasonic Thermometry in Oil Shale Retorts," Symposium on Instrumentation and Control for Fossil Energy Processes. 8 June 1981, San Francisco, CA.

25. Names of Authors

List name of first author in inverted order. Use initials, not full names. Each initial is followed by a period.

Jones, B.A.

Additional authors are listed in the order in which their names appear on the cited work. List names in regular order.

Jones, B.A., L.V. Dowah, and L.L. Aybos

26. Capitalization

Capitalize the initial letter of all major words in the titles.

27. Numerals

Use Arabic numerals for all numbers in the reference list except when the Roman numeral is part of the title.

28. Punctuation

Use periods to separate the major elements of an entry. Use commas within elements.

Use a period after initials in names of authors.

Italicize book titles and names of journals. Underline if italics are not available.

Titles of technical publications, journal articles, proceedings articles, and chapters are set in quotation marks.

29. Abbreviations

You may abbreviate the names of journals by using accepted abbreviations. If the accepted abbreviation is not known, spell out the journal title in full.

Do not mix abbreviated style with spelled-out style in one reference list.

Abbreviate the follow terms:

chapter ch.
edition ed.
editor(s) Ed. or Eds.
number no.
page(s) p. or pp.
part pt.
retrievable manuscript RM
revised edition rev. ed.
second edition 2d ed.
supplement Supp.
Technical Document TD
Technical Note TN
Technical Report TR
translated by trans
volume(s) vol., vols.

Sample References

Anderson, K.D. 1983. "Surface-Search Radar Performance in the Evaporation Duct: Global Predictions." NOSC TR 923 (Oct). Naval Ocean Systems Center, San Diego, CA.

Bronowski, J. 1973. *The Ascent of Man,* p. 19. Little, Brown, and Co., Boston, MA.

Calcagni, R.E., and W. Sherwood. 1984. "Patchable Control Store for Reduced Microcode Risk in a VLSI VAX Microcomputer," 17th Microprog. Workshop: IEEE/ACM SIGMICRO 17 (pp. 70-76). 30 Oct 1984, St. Louis, MO.

Control Data Corp. 1983. "AN/AYK-14(V) Instruction Set Programmer's Reference Manual," no. 14122000, sec. 7, San Diego, CA.

Coulter, N.S., and N.H. Kelly. 1986. "Computer Instruction Set Usage by Programmers: An Empirical Investigation," Comm. ACM, vol. 29, no. 7, pp. 643-647.

Mackelburg, G. R., S. J. Watson, and W. D. Bryan. 1992. "Advanced Unmanned Search System (AUSS) Acoustic Communication Link Development." NRaD TR 1531 (Nov). Naval Command, Control and Ocean Surveillance Center, RDT&E Division, San Diego, CA.

Naval Electronic Systems Command. 1979. "Contract Specification, Processor, Reconfigurable, Militarized." ELEX-P-351A, sec. 3.5.2.5, p. 11. Washington, D.C.

Naval Sea Systems Command. 1972. "Master Plan for Tactical Embedded Computer Resources." NAVSEA AR 403. Washington, D.C.

Sperry Corp. 1986. "Preliminary Technical Manual: Operation and Maintenance with Parts List: Data Processing Set AN/UYK-44(V)," rev. 1, vol. 1., Minneapolis, MN.

Wulf, W.A. 1981. "Compilers and Computer Architecture," *IEEE Computer,* vol. 14, no. 7, pp. 41-47.

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APPENDIX A

TD1064 Appendix A is under construction.

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SIMPLE ALTERNATIVE WORDS

	Alternative
accompany	go with
accomplish	carry out, do
accomplish (a form)	fill out
accordingly	so
accrue	add, gain
accurate	correct, exact, right
achieve	do, make
actual	real
additional	added, more, other
address	discuss
adjacent to	next to
advantageous	helpful
advise	recommend, tell
afford an opportunity	allow, let
aircraft	plane
anticipate	expect
a number of	some
apparent	clear, plain
appear	seem
appreciable	many
appropriate	(omit), proper, right
approximately	about
as a means of	to
ascertain	find out, learn
as prescribed by	under
assist, assistance	aid, help
attached herewith is	here is
attempt	try
at the present time	now
be responsible for	handle
benefit	help
by means of	by, with
capability	ability, can
category	class, group
caveat	warning
close proximity	near
cognizant	aware, responsible
combined	joint
comply with	follow
component	part
comprise	form, include, make up
concerning	about, on
conclude	close, end
concur	agree
confront	face, meet
consequently	so
consolidate	combine
constitute	merge, join, combine

construct	build
contains	has
continue	keep on
contribute	give
deem	think
delete	cut, drop
demonstrate	prove, show
depart	leave
designate	appoint, choose, name
desire	wish
determine	decide, figure, find
develop	grow, make, take place
disclose	show
discontinue	drop, stop
disseminate	issue, send out
due to the fact that	due to, since, as
echelon	level
effect	make
elect	choose, pick
eliminate	cut, drop, end
employ	use
encounter	meet
encourage	urge
endeavor	try
ensure	make sure
enumerate	count
equitable	fair
equivalent	equal
establish	set up, prove, show
evaluate	check, rate, test
evidence	show
evident	clear
examine	check, look at
exhibit	show
expedite	hurry, rush, speed up
expeditious	fast, quick
expend	pay out, spend
expense	cost, fee, price
expertise	ability, skill
explain	show, tell
facilitate	ease, help
factor	reason, cause
failed to	did not
feasible	can be done, workable
females	women
final	last
finalize	complete, finish
for a period	for
for example	such as
forfeit	give up, lose
for the purpose of	for, to
forward	send
function	act, role, work
furnish	give, send
herein	here
however	but
identical	same
identify	find, name, show
immediately	at once
impacted	affected, changed, hit

implement	carry out, do, follow
in accordance with	by, following, under
in addition	also, besides, too
in an effort to	to
inasmuch as	since
in a timely manner	on time
inception	start
in conjunction with	with
in consonance with	agree with
incorporate	blend, join, merge
incumbent upon	must
indicate	show, write down
indication	sign
initial	first
in lieu of	instead of
in order that	for, so
in order to	to
in regards to	about, concerning, on
in spite of the fact that	despite
interface with	deal with
interpose no objection	do not object
in the amount of	for
in the event that	if
in the near future	soon
in view of	since
in view of the above	so
justify	prove
legislative	law
liaise with	coordinate, talk with
limited number	few
limitation	limits
locate	find
location	place, scene, site
magnitude	size
maintain	keep, support
majority	greatest, longest, most
males	men
methodology	method
minimize	decrease, lessen, reduce
modify	change
monitor	check, watch
nebulous	vague
necessitate	cause, need
non-concur	disagree
notify	let know, tell
not later than	by
numerous	many, most
objective	aim, goal
obligate	bind, compel
observe	see
obtain	get
operate	run, work
operational	working
optimum	best, greatest, most
option	choice, way
parameters	limits
participate	take part
perform	do

permit	let
personnel	people, staff
pertaining to	about, of, on
point in time	point, time
portion	part
position	place, put
possess	have, own
practicably	practical
preclude	prevent
prepared	ready
previous	earlier, past
prioritize	rank
prior to	before
probability	chance
procedures	rules, ways
proceed	do, go on, try
proficiency	skill
programmed	planned
promulgate	announce, issue
provide	give, say, supply
provided that	if
provides guidance for	guides
purchase	buy
pursuant to	by, following, under
reason for	why
recapitulate	sum up
reduce	cut
reflect	say, show
regarding	about, of, on
relating to	about, on
relocation	move
remain	stay
remainder	rest
remuneration	pay, payment
render	give, make
request	ask
require	must, need
requirement	need
reside	live
retain	keep
review	check
election	choice
shortfall	shortage
similar to	like
solicit	ask for
state	say
state-of-the-art	latest
subject	the, this, your
submit	give, send
subsequent	later, next
subsequently	after, later, then
substantial	large, real, strong
sufficient	enough
ask	ask
terminate	end, stop
therefore	so
there in	there
there is	exist
thereof	either there or of
timely	prompt

time period	either time or period
transmit	send
transpire	happen, occur
ntil such time as	until
(the) use of	use
utilize, utilization	use
alidate	confirm
value	cost, worth
verbatim	exact
viable	practical
vice	instead of, versus
arrant	call for, permit
whenever	when
whereas	since
with reference to	about
with the exception of	except for
witnessed	saw

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APPENDIX B

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SELECTED STANDARD ABBREVIATIONS

absolute (temperature and gravity): abs
absolute ampere: abs A
absolute ceiling: A/C
abstract: abs
acceleration due to gravity, gram: g
acre: spell out
air horsepower: air hp
alternating current: ac
altitude: alt
ambient: amb
ambient noise meter: ANM
ammeter: MM
ampere:
ampere-hour: h
ampere-minute: min
ampere per meter: /m
ampere per weber: /Wb
ampere-turn: t
ampere-turn per meter: At/m
amplitude modulation: M
ante meridiem: .m.
antilogarithm: ntilog
atmosphere: tm
atomic: T
atomic mass unit (unified): u
atomic volume: vol
atomic weight: t wt
attoampere: A
audio frequency: F
average: vg
avoirdupois: vdp
azimuth: z
bar: bar
barn: b
barometer: bar
barrel: bbl
bel: B
billion B
billion electronvolts: BeV
binary coded decimal: CD
binary digit: bit
biot: Bi
bit: b
bits per inch: bpi
bits per second: bps
bit rate: BR
block coefficient: b coeff
board foot: bd-ft
bohr: bohr
boiling point: bp
brake horsepower: bhp

brake horsepower-hour: bhp-hr
brake mean effective pressure: bmep
Brinell hardness number: Bhn
British thermal unit: Btu
byte: B
calculate: calc
caliber: spell out
Calorie (large): Cal
calorie (small): cal
candela: cd
candle (obsolete): d
candle hour, candela hour: ch or cSh
candlepower: cp
cathode-ray oscilloscope: CRO
cathode-ray tube: crt
Celsius heat unit: CHU
Celsius thermal unit: CTU
centare: Ca
center of gravity: CG
centerline: CL
centibel: cB
centigram: cg
centigram second: cgs
centiliter: cL
centimeter: cm
centimeter-gram-second (system): CGS
centimeter per second: cm/s
centipoise: cP
centistoke: cSt
circular: cir
circular mil: cmil
coefficient: coef
cognate: cog
cologarithm: colog
composition: comp
conductivity: cndct
confer (compare): cf
constant: const
constant hot water: chw
continued: contd
continuous wave: cw
cord-foot: cd-ft
cosecant: cosec
hyperbolic cosecant: csch
cosine: cos
hyperbolic cosine: cosh
cotangent: cot
hyperbolic cotangent: coth
coulomb: C
counterweight: ctwt
critical: crit.
crystalline: cryst.
cubic measurements: (Use abbreviation
: : with superscript 3)
curie: Ci
current density: c.d.
cycle: spell out
cycle per second (or hertz): cps (or Hz)
cylinder, cylindrical: cyl
darcy: D

deadweight: dwt
debye: D
deca, deka: da
dacastere: dks
decibel: dB
decibel over isotropic: dBi
decibel referred to 1 milliwatt: dBm
decibel referred to 1 watt: dBW
decigram: dg
degree (angular): deg
(can use degree symbol followed by abbreviation)
degrees of freedom: df
dekagram: dag
dekaliter: daL
dekameter: dam
derivative: deriv
deviation: dev
diameter: dia
dilute: dil
direct current: dc
ditto: spell out
double sideband: DSB
double-pole double-throw switch dpdt: sw
double-pole single-throw switch dpst: sw
dyne: dyn
edited, edition: ed.
editor, editors: Ed., Eds.
effective horsepower: ehp
electric, electrical: elec
electromagnetic unit: emu
electromotive force: emf
electronic countermeasure: ECM
electronvolt: eV
electrostatic unit: esu
elevation: el
entropy unit: en
equation: eq
equilibrium: equil
equivalent: equiv
equivalent airspeed: eas
erg: spell out
estimate: est
et cetera: etc.
exa (10) (SI prefix): E
extra high voltage: ehv
extremely high frequency: EHF
extremely low frequency: ELF
farad: F
farad per meter: F/m
fathom: fath
femto (prefix, 10): f
femtometer: fm
fermi: F
filament: fil
fluid: fl
fluid dram: fl dr
following (pages): ff.
foot: ft
foot board measure: fbm
footcandle: ftc

footlambert: fL
foot per minute: ft/min, fpm
foot per second: ft/s, fps
foot pound: ftSlb
foot poundal: ftSpdl
foot pound-force: ftSlbf
foot-pound-second: (system) FPS
frames per second: fps
franklin: Fr
freezing point: fp
frequency modulation: FM
friction horsepower: fhp
friction mean effective pressure: fmep
furlong: fur
fusion point: fnpt
gallium: Ga
gallium arsenide: aAs
gallon: gal
gallon per minute: gal/min, gpm
gallon per second: gal/s, gps
gauge: ga.
gauss: G
Germanium: Ge
gibbs: gibbs
giga (prefix, 109): G
gigabyte (1 billion bytes): GB (or GBytes)
gigacycle per second (or
gigahertz): Gc/s (or GHz)
giga floating point operations
per second: GFLOPS
gigaelectronvolt: GeV
gigahertz: GHz
gigawatt: GW
gilbert: Gb
grain: gr
gram: g
gram atom: g-at
gram-calorie: g-cal
gram mole: g-mole
ground: gnd
gross weight: grwt
hectare: ha
hectogram: hg
hectoliter: hL
hectometer: hm
height: ht.
henry: H
microhenry: mH
hertz: Hz
high energy: HE
high explosive: HE
high frequency: HF
high-pressure (adj.): spell out
high voltage: HV
hops per second: HPS
horsepower: hp
horsepower-hour: hph
hour: h
hundredweight: cwt
hydrogen ion concentration: pH

hydroxyl ion concentration: pOH
hyperbolic tangent: tanh
hyperbolic cosine: cosh
impedance: Z
inch: in
inch per second: in/s
inch pound: n-lb
inches per minute: in/min
indicated airspeed: IAS
indicated horsepower: ihp
infrared: IR
inside diameter: ID
instructions per second: IPS
intermediate frequency: IF
intermediate-pressure (adj.): spell out
international angstrom: I
isometric: isom.
isothermal: isoth.
isotropic: iso.
jet horsepower jet: hp
joule: J
joule per degree kelvin: J/K
karat kt
kelvin (273.15 + temp in oC): K
kilobits per second: kbps, kb/s
kilocalorie: kcal
kilocalorie per mole: kcal/mole
kilohertz: kHz
kiloelectronvolt: keV
kilogauss: kG
kilogram-calorie: kg-cal
kilogram-force: kgf
kilogram meter: kg-m
kilogram per second: kg/s
kilohertz: kHz
kilomegacycle: kMc
kilometer: km
kilometer per hour: km/h
kilo-oersted: kOe
kilohm: kW
kilojoule: kJ
kiloliter: kL
kilo per cubic meter: kg/m
kiloton: kt
kilovar: kvar
kilovolt: kV
kilovoltampere: kVA
kilovolt peak: kVp
kilowatt: kW
kilowatthour: kWh
kiloyard: kyd
kinetic energy: KE
knot: kn or spell out
knots equivalent airspeed knots: EAS
knots indicated airspeed knots: IAS
knots true airspeed knots: TAS
lambert: L
latitude: lat.
least mean square: LMS
letter: ltr

limit: lim
line of sight (0-30 miles): LOS
linear foot: lin ft
lines pairs per millimeter: LP/mm
lines per minute: l/m
lines per second: l/s
liquid oxygen: lox
logarithm: log
logarithm (natural): ln
longitude: long.
low frequency: LF
low-pressure (adj.): spell out
lumen: lm
lumen-hour: lmSh
lumen per square foot: lm/ft2
lumen per square meter: lm/m2
lumen per watt: lm/W
lumen second: lmSs
lux: lx
mach number: M
magnetic: mag
magnetomotive force: m.m.f.
manhour: (prefer workhour, Wh): M/H
mark: Mk
mass unit: mu
maximum: max.
maxwell: Mx
mean effective pressure: mep
mean point of impact: MPI
mean sea level: MSL
medium frequency: MF
megabit: Mb
megabits per second: Mbps
megabyte: MB, Mbyte
megabytes per second: MBps
megahertz: MHz
megaton: Mton, Mt
megavolt: MV
megawatt: MW
megohm: MW
meter: m
meter-kilogram-second (system): MKS
meter per second: m/s
melting point: mp
mho: (obsolete, use s, siemens): spell out
microampere: mA
microbar: mbar
microfarad: mF
microgram: mg
microhenry: mH
micrometer: mm
microsecond: ms
microsiemens: mS
microwatt: mW
mil: spell out
mile (statute): mi
mile per hour: mi/h, mph
milli (prefix, 10): m
milliampere: mA
millibar: mb

millibarn: mb
millicurie: mCi
milliequivalent: meq
millifarad: mF
milligauss: mG
milligram: mg
millihertz: mHz
millihenry: mH
millilambert: mL
milliliter: mL
millimeter: mm, mL
millimeters of mercury: mmHg
millimicron: mm
millimole: mmole
million: M
million pounds per square inch: MSI
millions of instructions per second: MIPS
milliradians: mrad
milliroentgen: mr
milliroentgen equivalent man: mrem
milliroentgen equivalent physical: mrep
millisecond: ms
millivolt: mV
milliwatt: mW
minimum: min.
minute (time): min
modulator: mod
molar: M
mole: spell out
molecular weight: mol wt
molecule: mol
month: mo
myriagram: myg
myrialiter: myl
nanoampere: nA
nanofarad: nF
nanometer: nm
nanosecond: ns
nanowatt: nW
narrowband: nb
nautical mile: nmi
natural logarithm: nl
neper: Np
newton: N
newton-meter: N-m
newton per square meter: N/m2
nitrocellulose: NC
nitroglycerin: NG
normal: norm.
normal (as applied to concentration): N
ohm: W
ounce (avoirdupois): oz
ounce-foot: oz-ft
ounce-inch: oz-in
outside diameter: OD
page: p.(plural, pp.)
paragraph: par.
part: pt.
part per million: ppm, p/m
pascal: Pa

pascal-second: Pa-s
pel, pixel, pita (1015): P
pennyweight: pwt
perpendicular: per.
photoelectromagnetic: PEM
pico (prefix, 10-12): p
picoampere: pA
picofarad: pF
picosecond: ps
picowatt: pW
picture element: pel
pint: pt
poise: P
post meridiem: p.m.
potentiometer: pot
potential difference: spell out
pound: lb
poundal: pdl
pound, apothecaries: lb ap
pound, avoirdupois: lb,avdp
pound per foot: lb/ft
pound-force: lbf
pound-force foot: lbf/ft
pound per square inch: lb/in2, psi
pound-per-square inch absolute: psia
pound-per-square-inch gauge: psig
pound-mass: lbm
pound, ton: lbt
power: pwr
power amplifier: pa
power factor: pf
prandtl number: Pr
precipitate: ppt
pressure-volume-temperature: pvt
pulses per minute: ppm
pulse amplitude modulation: pam
pulse code modulation: PCM
pulse duration modulation: PDM
pulse position modulation: PPM
pulse repetition frequency: PRF
pulses per second: pps
pulse width: pW
quadrant: quad
quadrant elevation: QE
quart: qt
quintal: q
rad: rd
radian: rad
radio frequency: RF
radius: R
range: rng
reference: ref
relative: rel
relative humidity: rh
revolution: rev
revolution per minute: r/min, rpm
revolution per second: r/s, rps
rhombic: rhomb
rod: spell out
roentgen: R

roentgen equivalent man: rem
roentgen equivalent physical: rep
root-mean-square: rms
saturate: sat
secant: sec
second (time): s
shaft horsepower: shp
siemens (replaces mho): S
sine: sin
hyperbolic sine: sinh
single-pole double-throw switch: spdt sw
single-pole single-throw switch: spst sw
single sideband: ssb
slug: spell out
solution: soln.
specific gravity: sp gr
specific heat: sp ht
specific volume: sp vol
spherical candlepower: scp
square: sq
standard: std
standing-wave ratio: swr
steradian: sr
super-high frequency: SHF
switch (used only in art): sw
tangent: tan
target-detecting device: tdd
telemetry: tlmy
temperature: temp
tensile strength: ts
tesla: T
thermal megawatt: tMW
thrust horsepower: thp
tolerance: tol
ton: spell out
tonne: t
torr: spell out
transducer: xdcr
transistor: xstr
translated, translation, translator: tr
troy: t
true airspeed: tas
true mean: tm
true position: TP
Twaddell: Twad
ultrahigh frequency: UHF
ultrahigh voltage: UHV
ultraviolet: UV
universal time: UT
vapor density: VD
variation: var
versed sine: vers
versus: vs.
very high frequency: VHF
very low frequency: VLF
voice unit: VU
video frequency: VF
viscosity: visc
volt: V
voltampere: VA

voltampere reactive: VAr
volts, alternating current: Vac
volts, direct current: Vdc
volt-ohm-milliammeter: VOM
volume: vol.
watt: W
watthour: Wh
watt per candle: W/c
watt per steradian: W/sr
wavelength: WL
weber: Wb
week: wk
weight: wt
wideband: WB
workyear: WH
yard: yd
year: yr

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TD APPENDIX C

SPELLING DE

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accelerate
accessible
accommodate
accumulate
acknowledgment
Ada
adaptable
aircrew
airfield
airframe
airspeed
alongside
antiaircraft
antisubmarine
aperture
appendices
auxiliary
bandwidth
barchart
baseline
BASIC
battlefield
battle group
beamformer
beamwidth
bipolar
breakpoint
buoy
calendar
callout
canceled
catalog
checklist
COBOL
commitment
committed
compatible
compiler
concomitant
conferred

controlled
coprocessor
correlate
corroborate
cross section
cumulative
cut off (verb)
cutoff (noun, unit modifier)
database
de-emphasize
descend
desirable
desktop
disk
Doppler
downgrade
downtime
editor
embarrassment
embedded
eminent (high)
empirical
end product
end user
ensure (insurance companies insure)
erasable
erroneous
executable
exited
expandable
expendable
extant (existent)
feedback
fiber optics
fiber-optic system
file name
flowchart
focuses
foreword
FORTRAN
gauge
guarantee
hard copy
hotspot
illegible
imminent (impending)
in-house
initiative
innovate
inputted
inputting

intercede
interfered
interfering
irreparable
judgment
keyboard
knowledgeable
latitude
liquefy
luminescent
maintenance
manageable
maneuver
measurable
monthend
movable
multitasking
necessarily
nonacoustic
nonexistent
noticeable
numerical
O-ring
occasionally
occupied
occurred
occurrence
occurring
occurs
omission
omitted
omitting
on board (e.g., equipment on board)
onboard (e.g., onboard training)
ordinance (law)
ordnance (military supplies)
overall
overestimate
overrule
overrun
parallel
payoff
percent
permitted
permitting
possess
precede
predecessor
preferably
preferred
preferring

preset
primarily
principal (main, chief)
principle (fundamental law)
printout
procedures
proceed
programmed
propagate
rarefy
real time
recede
receive
recognizable
reenter
repetition
run time
schedule
seawater
secondary
secondhand
self-defense
separate
shipboard
signaled
similar
subtask
succeed
summarize
supersede
susceptible
symmetry
targeted
tech base
Teflon
testbed
threshold
timeframe
torpedoes
transferred
transferring
transmitted
transmitting
traveled
traveling
twofold
ultrathin
unfeasible
unusable
uplink
usable

usefulness
vacuum
versatile
volatile
war game
waveform
wavelength
workday
workhour
workspace
workweek
workyear
year-end

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TD APPENDIX D

GLOSSARY OF CORRECT USAGE

This portion of TD1064 is under construction.

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ACCEPT, EXCEPT

The word accept is a verb that means to consent to or to receive.
I accept the conditions of the agreement.

Except simply means to exclude.

She was excepted from the workshop.

Except can also mean other than.

Everyone except John appreciated the manager's efforts.

ADVICE, ADVISE
Pronounced and spelled differently, advice is a noun, advise is a verb.

Patients should follow their doctors' advice.
Patients should do what their doctors advise.

AFFECT, EFFECT
Affect, meaning to influence, is a verb only. Effect may function as a verb or a noun. The verb effect means to bring about or to achieve; the noun effect means the result.

The reforms affected many citizens.
The citizens effected a few reforms.
He said that wars affect the economy.
He stressed the effect of wars on the economy.

A LOT
A lot is always written as two words.

ALREADY, ALL READY
Already means before or by the time specified. All ready means completely prepared.

The theater was already full by 7 o'clock.
The cast was all ready for the curtain call.

ALL RIGHT
Alright is an unacceptable spelling of all right.

ALL TOGETHER, ALTOGETHER

All together refers to the actions of a collective group, or everybody or everything in one place. Altogether is an adverb that means entirely or thoroughly.

The envelopes were all together in one box.
They laughed all together.
I am not altogether pleased with your report.

AMONG, BETWEEN
Among always implies more than two, a group; between literally implies only two.

What honor was there among the 40 thieves?
What is the difference between a thief and a robber?

AN, A
Use a before a consonant SOUND, an before a vowel SOUND.

a heavy load
a nap
a uniform
a one-man show
an honest boy
an ape
an umppire
an only child

CAN, MAY
Formally, can means ability to, while may denotes permission.

Incorrect: Can I leave for lunch now?
Correct: May I leave for lunch now?

COMPRISE
Literally, embrace: A zoo comprises mammals, reptiles, and birds. By definition, the whole comprises the parts; the parts do not comprise the whole, nor is the whole comprised OF its parts.

The Union comprises 50 states.
Fifty states compose the Union.
The Union is composed of 50 states.

CONTINUAL, CONTINUOUS
Continual implies steady, but intermittent succession; continuous means complete absence of interruption.

Continual interruptions delayed the rehearsal.
The continuous roar of the waterfall is deafening.

DATA, CRITERIA, PHENOMENA
Plural nouns are best used with plural verbs. The plural data can be used as a collective noun: NRaD practice is to keep it plural whenever possible.

DISINTERESTED
Means impartial. Do not confuse it with uninterested, which means not interested.

Let a disinterested person judge our dispute. (an impartial person)
This man is obviously uninterested in our dispute. (couldn't care less)

ENSURE, INSURE, ASSURE
All mean to make secure or certain. Assure refers to persons, and it alone has the sense of setting a person's mind at rest: to assure a leader of one's loyalty. All three verbs may be applied to the act of making something certain: Success is assured (or ensured or insured). Ensure and insure also mean to make secure from harm: to ensure a nation against famine. Only insure has come to be widely used in the sense of guaranteeing life or property against risk.

IMPLY, INFER
The writer or speaker implies; the reader or listener infers. Imply means to suggest without stating; infer means to reach a conclusion based upon evidence. (not interchangeable)

His statement implies that he will resign. From his statement I infer that he will resign.

FARTHER, FURTHER
The two words are commonly interchanged but have a distinction worth observing: Farther serves best as a distance word, further as a time or quantity word. You chase a ball farther than the other fellow; you pursue a subject further.

ITS, IT'S
Its is a possessive pronoun; it's is a contraction of it is or it has.

LAY, LIE
Lay means to put, place, or prepare, and lie means to recline or be situated. In the senses noted, lay always takes a direct object; lie never does.

The hen (or the play) lays an egg. The llama lies down.
The playwright went home and lay down.
lay, laid, laid, laying
lie, lay, lain, lying

LIKE
Not to be used for the conjunction as. Like governs nouns and pronouns; before phrases and clauses, the equivalent word is as.

She looks like me.
We spend the evening as in the old days.

LOSE, LOOSE
Lose means to cease having. Loose (verb) means to set free. Loose (adjective) means free, not fastened.

MEDIUM, MEDIA
Medium is singular and media is plural. Do not use medias.

Incorrect: The newsletter is the media that is most effective.

Correct: The newsletter is the medium that is most effective.
Incorrect: Newsletters and pamphlets are the medium most often used.
Correct: Newsletters and pamphlets are the media most often used.

PRINCIPAL, PRINCIPLE
Distinguish between principal, an adjective or noun meaning main or chief, and the noun principle, meaning fundamental truth.

SHALL, WILL
The word shall seems to be used less and less. When you use shall, you tend to create a more formal sentence. In a Statement of Work (SOW), write, "The contractor shall" and "The government will."

THAT, WHICH
That is the defining or restrictive pronoun, which is nondefining or nonrestrictive.

The lawn mower that is broken is in the garage. (tells which one)
The lawn mower, which is broken, is in the garage. (used simply as a parenthetical expression between commas)

UNIQUE Means without equal. Hence, there are no degrees of uniqueness.

Wrong: It was the most unique egg beater on the market.
Right: It was a unique egg beater.

UTILIZE
Prefer use.

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